

Applicant : Neil H. Bander  
Serial No. : 09/357,704  
Filed : July 20, 1999  
Page : 2

Attorney's Docket No.: 10448-184002 / MP11996-  
037P2RDV1A(RCE)

72. A method according to claim 69, wherein the administering is carried out parenterally.

73. A method according to claim 72, wherein the administering is carried out intravenously.

74. A method according to claim 69, wherein the administering is carried out by intracavitary instillation.

75. A method according to claim 69, wherein the administering is carried out rectally.

76. A method according to claim 69, wherein the antibody or antigen binding portion thereof is administered following a prostatectomy.

77. A method according to claim 69, wherein the antibody or antigen binding portion binds live cells and/or wherein the antibody is an IgG.

78. A method according to claim 69, wherein the antibody is selected from the group consisting of a monoclonal antibody and a polyclonal antibody.

79. A method according to claim 78, wherein the antibody is selected from the group consisting of an E99, a J415, a J533, and a J591 monoclonal antibody.

80. A method according to claim 78, wherein the antibody is a monoclonal antibody produced by a hybridoma having an ATCC Accession Number selected from the group consisting of HB-12101, HB-12109, HB-12127, and HB-12126.

81. A method according to claim 69, wherein the antibody or antigen binding portion thereof binds to an epitope of prostate specific membrane antigen which is also recognized by a

Applicant : Neil H. Bander  
Serial No. : 09/357,704  
Filed : July 20, 1999  
Page : 3

Attorney's Docket No.: 10448-184002 / MPI1996-  
037P2RDV1A(RCE)

monoclonal antibody selected from the group consisting of an E99, a J415, a J533, and a J591 monoclonal antibody.

82. A method according to claim 81, wherein the antibody or antigen binding portion thereof binds to an epitope of prostate specific membrane antigen which is also recognized by monoclonal antibody J591.

83. A method according to claim 69, wherein the antibody or antigen binding portion thereof comprises an antigen binding portion of an amino acid sequence selected from the group consisting of SEQ ID NO:8 (variable heavy chain), SEQ ID NO:19 (variable light chain), an amino acid sequence of the variable heavy chain produced by the hybridoma having ATCC deposit no. HB-12126, and an amino acid sequence of the variable light chain produced by the hybridoma having ATCC deposit no. HB-12126.

84. A method according to claim 83, wherein the antibody or antigen binding portion thereof comprises an antigen binding portion of an amino acid sequence of SEQ ID NO:8 (variable heavy chain) or an amino acid sequence of the variable heavy chain produced by the hybridoma having ATCC deposit no. HB-12126 and an antigen binding portion of an amino acid sequence of SEQ ID NO:19 (variable light chain) or an amino acid sequence of the variable light chain produced by the hybridoma having ATCC deposit no. HB-12126.

85. A method according to claim 83, wherein the antibody or antigen binding portion thereof comprises an antigen binding portion of an amino acid sequence selected from the group consisting of SEQ ID NO:8 (variable heavy chain) and SEQ ID NO:19 (variable light chain).

86. A method according to claim 83, wherein the antibody or antigen binding portion thereof comprises an antigen binding portion of an amino acid sequence from SEQ ID NO:8 (variable heavy chain) and an antigen binding portion of an amino acid sequence from SEQ ID NO:19 (variable light chain).

Applicant : Neil H. Bander  
Serial No. : 09/357,704  
Filed : July 20, 1999  
Page : 4

Attorney's Docket No.: 10448-184002 / MPI1996-  
037P2RDV1A(RCE)

87. A method according to claim 83, wherein the antibody or antigen binding portion thereof comprises an antigen binding portion of an amino acid sequence selected from the group consisting of an amino acid sequence of the variable heavy chain produced by the hybridoma having ATCC deposit no. HB-12126, and an amino acid sequence of the variable light chain produced by the hybridoma having ATCC deposit no. HB-12126.

88. A method according to claim 83, wherein the antibody or antigen binding portion thereof comprises an antigen binding portion of an amino acid sequence of the variable heavy chain produced by the hybridoma having ATCC deposit no. HB-12126 and an antigen binding portion of an amino acid sequence of the variable heavy chain produced by the hybridoma having ATCC deposit no. HB-12126.

89. A method according to claim 69, wherein the antibody or antigen binding portion thereof comprises an antigen binding portion of an amino acid sequence encoded by a nucleic acid sequence selected from the group consisting of SEQ ID NO:6 (variable heavy chain), SEQ ID NO:17 (variable light chain), a nucleic acid sequence which encodes the variable heavy chain produced by the hybridoma having ATCC deposit no. HB-12126, and a nucleic acid sequence which encodes the variable light chain produced by the hybridoma having ATCC deposit no. HB-12126.

90. A method according to claim 89, wherein the antibody or antigen binding portion thereof comprises an antigen binding portion encoded by a nucleic acid sequence of SEQ ID NO:6 (variable heavy chain) or a nucleic acid sequence which encodes the variable heavy chain of the hybridoma having ATCC deposit no. HB-12126 and an antigen binding portion encoded by a nucleic acid sequence of SEQ ID NO:17 (variable light chain) or a nucleic acid sequence which encodes the variable light chain produced by the hybridoma having ATCC deposit no. HB-12126.

91. A method according to claim 89, wherein the antibody or antigen binding portion thereof comprises an antigen binding portion of an amino acid sequence encoded by a nucleic

Applicant : Neil H. Bander  
Serial No. : 09/357,704  
Filed : July 20, 1999  
Page : 5

Attorney's Docket No.: 10448-184002 / MPI1996-  
037P2RDVIA(RCE)

acid sequence selected from the group consisting of SEQ ID NO:6 (variable heavy chain) and SEQ ID NO:17 (variable light chain).

92. A method according to claim 89, wherein the antibody or antigen binding portion thereof comprises an antigen binding portion of an amino acid sequence encoded by a nucleic acid sequence from SEQ ID NO:6 (variable heavy chain) and an antigen binding portion of an amino acid sequence encoded by a nucleic acid sequence from SEQ ID NO:17.

93. A method according to claim 89, wherein the antibody or antigen binding portion thereof comprises an antigen binding portion of an amino acid sequence encoded by a nucleic acid sequence selected from the group consisting of a nucleic acid sequence which encodes the variable heavy chain produced by the hybridoma having ATCC deposit no. HB-12126, and a nucleic acid sequence which encodes the variable light chain produced by the hybridoma having ATCC deposit no. HB-12126.

94. A method according to claim 89, wherein the antibody or antigen binding portion thereof comprises an antigen binding portion of an amino acid sequence encoded by a nucleic acid which encodes the variable heavy chain produced by the hybridoma having ATCC deposit no. HB-12126 and an antigen binding portion of an amino acid sequence encoded by a nucleic acid which encodes the variable heavy chain produced by the hybridoma having ATCC deposit no. HB-12126.

95. A method according to claim 69, 81, 83, or 89, wherein the antibody is a monoclonal antibody.

96. A method according to claim 69, 81, 83, or 89, wherein the antibody or antigen binding portion thereof is internalized with the prostate specific membrane antigen.

97. A method according to claim 69, 81, 83, or 89, wherein the antibody or antigen binding portion thereof is selected from the group consisting of a Fab fragment, a F(ab')<sub>2</sub>

Applicant : Neil H. Bander  
Serial No. : 09/357,704  
Filed : July 20, 1999  
Page : 6

Attorney's Docket No.: 10448-184002 / MPI1996-  
037P2RDV1A(RCE)

fragment, and a Fv fragment.

98. A method according to claim 69, 81, 83, or 89, wherein the antibody or antigen binding portion thereof further comprises a cytotoxic drug.

99. A method according to claim 98, wherein the cytotoxic drug is selected from the group consisting of a therapeutic drug, a compound emitting radiation, molecules of plant, fungal, or bacterial origin, biological proteins, and mixtures thereof.

100. A method according to claim 99, wherein the cytotoxic drug is a compound emitting radiation.

101. A method according to claim 100, wherein the compound emitting radiation is an alpha-emitter.

102. A method according to claim 101, wherein the alpha-emitter is selected from the group consisting of  $^{212}\text{Bi}$ ,  $^{213}\text{Bi}$ , and  $^{211}\text{At}$ .

103. A method according to claim 100, wherein the compound emitting radiation is a beta-emitter.

104. A method according to claim 103, wherein the beta-emitter is  $^{186}\text{Re}$ .

105. A method according to claim 103, wherein the beta-emitter is  $^{90}\text{Y}$ .

106. A method according to claim 100, wherein the compound emitting radiation is a gamma-emitter.

107. A method according to claim 106, wherein the gamma-emitter is  $^{131}\text{I}$ .

Applicant : Neil H. Bander  
Serial No. : 09/357,704  
Filed : July 20, 1999  
Page : 7

Attorney's Docket No.: 10448-184002 / MPI1996-  
037P2RDVIA(RCE)

108. A method according to claim 100, wherein the compound emitting radiation is a beta- and gamma-emitter.

109. A method according to claim 99, wherein the cytotoxic drug is a molecule of bacterial origin.

110. A method according to claim 99, wherein the cytotoxic drug is a molecule of plant origin.

111. A method according to claim 99, wherein the cytotoxic drug is a biological protein.

112. A method according to claim 69, 81, 83, or 89, wherein the antibody or antigen binding portion thereof further comprises a label.

113. A method according to claim 112, wherein the label is selected from the group consisting of a biologically-active enzyme label, and a radiolabel.

114. A method according to claim 113, wherein the label is a radiolabel selected from the group consisting of  $^{111}\text{In}$ ,  $^{99\text{m}}\text{Tc}$ ,  $^{32}\text{P}$ ,  $^{125}\text{I}$ , and  $^{188}\text{Rh}$ .

115. A method according to claim 69, 81, 83, or 89, wherein the antibody or antigen binding portion thereof is effective to initiate an endogenous host immune function.

116. A method according to claim 115, wherein the endogenous host immune function is complement-mediated cellular cytotoxicity.

117. A method according to claim 159, wherein the endogenous host immune function is antibody-dependent cellular cytotoxicity.

118. A method according to claim 69, 81, 83, or 89, wherein the antibody or antigen

Applicant : Neil H. Bander  
Serial No. : 09/357,704  
Filed : July 20, 1999  
Page : 8

Attorney's Docket No.: 10448-184002 / MPI1996-  
037P2RDV1A(RCF)

binding portion thereof is in a composition further comprising a pharmaceutically acceptable carrier, excipient, or stabilizer.

119. The method according to claim 69, 81, 83, or 89, wherein the antibody is administered in conjunction with a second therapeutic modality.

120. The method according to claim 119, wherein the second therapeutic modality is selected from the group consisting of surgery, radiation, chemotherapy, immunotherapy and hormone replacement.

121. The method according to claim 120, wherein the hormone replacement comprises treatment with estrogen or an anti-androgen agent.

122. The method according to claim 121, wherein the anti-androgen agent is an agent which blocks or inhibits the effects of testosterone.

123. A method of treating, preventing, or delaying development or progression of prostate cancer comprising:

providing an antibody or antigen binding portion thereof which binds to an extracellular domain of prostate specific membrane antigen, wherein the antibody is an IgG; and

administering the antibody or antigen binding portion thereof to a subject in need of treatment under conditions effective to treat, prevent, or delay the development or progression of prostate cancer.

124. A method of treating, preventing, or delaying development or progression of prostate cancer comprising:

providing an antibody or antigen binding portion thereof which binds to an extracellular domain of prostate specific membrane antigen, wherein the antibody is labeled with the radiolabel <sup>90</sup>Y; and

administering the antibody or antigen binding portion thereof to a subject in need of

Applicant : Neil H. Bander  
Serial No. : 09/357,704  
Filed : July 20, 1999  
Page : 9

Attorney's Docket No.: 10448-184002 / MPI1996-  
057P2RDV1A(RCE)

treatment under conditions effective to treat, prevent, or delay the development or progression of prostate cancer.

125. A method of treating, preventing, or delaying development or progression of prostate cancer comprising:

providing an antibody or antigen binding portion thereof which binds to an extracellular domain of prostate specific membrane antigen, wherein the antibody is labeled with a radiolabel, and wherein the radiolabel is a beta- or gamma-emitter; and

administering the antibody or antigen binding portion thereof to a subject in need of treatment under conditions effective to treat, prevent, or delay the development or progression of prostate cancer.

126. A method of treating, preventing, or delaying development or progression of metastatic prostate cancer comprising:

providing an antibody or antigen binding portion thereof which binds to an extracellular domain of prostate specific membrane antigen; and

administering the antibody or antigen binding portion thereof to a subject in need of treatment under conditions effective to treat, prevent, or delay the development or progression of metastatic prostate cancer. --